

What is Claimed is:

1. A windshield wiper assembly, comprising at least one elongate tubular frame member, and a plurality of pivot mechanisms, each pivot mechanism having a flange portion having an open surface for mounting to an exterior surface of the tubular frame member and a pin mounting portion, and a retaining assembly for retaining the pivot mechanisms to the tubular frame member.
2. The windshield wiper assembly of claim 1, wherein said open surface is arcuate in cross section to substantially conform to the outside diameter of the elongate tubular frame member.
3. The windshield wiper assembly of claim 2, wherein said open surface includes elongate ribs, having an edge for gripping the outer surface of said elongate tubular frame member.
4. The windshield wiper assembly of claim 2, wherein said flange portion is generally rectangular in configuration, where said arcuate open surface is configured on an elongate surface of said rectangular shape.
5. The windshield wiper assembly of claim 4, wherein said pin mounting portion is configured transversely to said elongate surface of said rectangular shape.
6. The windshield wiper assembly of claim 2, wherein said clamp assembly is comprised of at least one clip portion which surrounds said elongate tubular frame member and said pivot mechanism, retaining them together.
7. The windshield wiper assembly of claim 6, wherein said clamp assembly is comprised of two clip portions, which flank said pin mounting portion, and which circumscribe the combination of said elongate tubular frame member and said pivot mechanism.

8. The windshield wiper assembly of claim 7, wherein said pivot mechanism, on a face opposite said arcuate open surface, has indentations, and said two clip portions have free ends which are crimped into said indentations.

9. The windshield wiper assembly of claim 8, further comprising piercing pins extending through said flange portion and extend into said elongate tubular frame member.

10. The windshield wiper assembly of claim 9, wherein said elongate tubular frame member includes mounting members to mount said assembly.

11. The windshield wiper assembly of claim 10, wherein said mounting members are defined by a portion of said elongate tubular frame member, flattened and formed with an aperture therethrough.

12. A method of forming an automotive wiper assembly, comprising the steps:

providing a tubular structural component;

providing the tubular structural component with the desired configuration;

providing a pivot mechanism having an open mounting face;

applying the pivot mechanism to the exterior surface of the tubular structural component; and

retaining the pivot mechanism to the tubular structural component.

13. The method of claim 12, wherein the retaining step is provided by clamping the pivot mechanism to the tubular structural component.

14. The method of claim 13, wherein the clamping is provided by wire clips being formed around the exterior of the tubular structural component and around the pivot mechanism.

15. The method of claim 14, further comprising the step of forming apertures in the outside face which is opposite the mounting face, and the free ends of the wire clips are crimped into the apertures.

16. The method of claim 13, wherein the tubular structural component is provided with a cylindrical cross-section.

17. The method of claim 16, further comprising the step of driving pins through the pivot pin housing, and radially into the tubular structural component, to prevent rotation of the pivot pin housing.

18. The method of claim 12, wherein tubular structural component is bent to define the desired configuration.

19. The method of claim 18, wherein the pivot pin housings are applied to tubular structural component distant from the ends of the tubular structural component.

20. The method of claim 19, wherein the free ends of the tube are flattened into mounting flanges and mounting apertures are provided through the flanges.